

populations. In the current study, we aimed to assess the prevalence of hyperuricemia in a Chinese population.

**Method:** We recruited a total of 4221 participants from a cross-sectional study, comprising 1892 type 2 diabetes patients and 2329 subjects with normal glucose tolerance (NGT). All cases were unrelated type 2 diabetes patients recruited from the inpatient database of Shanghai Diabetes Institute. The NGT subjects were assessed by standard 75 g OGTTs, and with negative family history of diabetes that recruited from Shanghai Diabetes Study and Shanghai Diabetes Study II. Hyperuricemia was defined as the concentration of serum uric acid >420 mmol/l in males and serum uric acid >357 mmol/l in females. In our study, most patients were not on a regular treatment for hyperuricemia. Phenotypes for anthropometric and biochemical traits related to uric acid were extensively measured for all participants.

**Result:** The overall prevalence of hyperuricemia was 11.16% in NGT subjects and 17.02% in type 2 diabetes patients. In females, the prevalence of hyperuricemia was significantly higher in type 2 diabetes patients than in those with NGT (20.39% vs. 7.63%,  $p < 0.001$ ). In males, it was opposite that the prevalence of hyperuricemia showed a tendency to be higher in NGT subjects than in type 2 diabetes patients (17.05% vs. 13.88%,  $p = 0.0588$ ). Then we assessed the prevalence of hyperuricemia stratified by age in both NGT subjects and type 2 diabetes patients. The prevalence of hyperuricemia increased with increasing age in females in both NGT subjects and type 2 diabetes patients ( $p < 0.0001$  in NGT subjects and  $p < 0.0001$  in type 2 diabetes patients). However, in males, the results were not significant ( $P = 0.4294$  in NGT subjects and  $p = 0.3966$  in type 2 diabetes). We also compared the prevalence of hyperuricemia between NGT subjects and the type 2 diabetes patients in females and males. The results showed that when age <55 in females, the prevalence of hyperuricemia was significantly higher in type 2 diabetes patients than in those with NGT ( $p < 0.0001$  when age <45 and  $p = 0.0037$  when  $45 \leq \text{age} < 55$ ). While in males, there is a obvious lower prevalence in type 2 diabetes patients than in those with NGT ( $p < 0.0001$  when  $45 \leq \text{age} < 55$  and  $p = 0.0037$  when  $55 \leq \text{age} < 65$ ).

**Conclusion:** Hyperuricemia is prevalent in Chinese type 2 diabetes patients and the age-associated prevalence of hyperuricemia was significant high in females. Therefore, strategies to prevent and treat hyperuricemia in type 2 diabetes patients are urgently needed in order to stem this national pandemic.

#### PO360

##### IS PROSTATIC SERUM ANTIGEN CORRELATED WITH INSULIN RESISTANCE IN MEN WITH TYPE 2 DIABETES MELLITUS-METS

H. Susanto<sup>1,1</sup>, A. Tjokropawiro<sup>1</sup>, S. Wibisono<sup>1</sup>, S. Murtiwi<sup>1</sup>, S. Adi<sup>1</sup>, A. Sutjahjo<sup>1</sup>, A. Pranoto<sup>1</sup>. <sup>1</sup>Surabaya Diabetes and Nutrition Center dr. Soetomo Teaching Hospital Airlangga University Faculty of Medicine, Surabaya, Indonesia

**Background:** Metabolic syndrome (MetS) is a cluster of cardiovascular risk factors that includes hypertension, diabetes mellitus, obesity, hypertriglyceridemia, and low high-density lipoprotein cholesterol, with insulin resistance as the underlying hallmark feature. The prevalence of MetS has been increasing worldwide and has become a major public health problem in many western countries.

Recently, increasing evidences suggests that MetS may be involved in the development and progression of certain types of cancer as an independent etiologic factor including breast cancer, endometrial cancer, colorectal cancer, pancreatic cancer and prostate cancer. MetS was firstly observed as a composite factor associated with prostate cancer risk in 2004, and more studies have since reported the association between MetS and prostate cancer.

In biologic models proposed to explain this association, researchers note the higher concentrations of insulin and insulin-like growth factor 1 (IGF-1) in early diabetes and the lower testosterone and IGF-1 levels and higher estrogen concentrations in long-term diabetes. Whether diabetes influences levels of biomarkers such as Prostate-Specific Antigen (PSA), which is involved in the detection of prostate cancer, is still unknown.

Factors influencing serum PSA levels in men include age, benign prostatic hyperplasia, prostatitis, and Body Mass Index (BMI). In this study, we examined whether PSA on the person who have insulin resistance which is often happen in men with Type 2 Diabetes Mellitus- Metabolic Syndrome.

**Method:** This cross sectional study was performed in Surabaya private clinic. Study period was six months between January to June 2014. Plasma concentrations of glycated haemoglobin (HbA1c) and fasting and post-prandial glucose were analysed and homeostatic model assessment of insulin resistance (HOMA-IR) were calculated. HOMA-IR value more than 2.0 is considered to be positive for IR. Statistical analysis was performed using SPSS 17.0 and Spearman's test.

**Result:** Fifty two male subjects were enrolled in this study. The mean age was  $62.32 \pm 8.72$  years old, fasting blood sugar  $139.68 \pm 43.65$  mg/dL, mean A1C  $7.89 \pm 1.80\%$ , the mean HOMA-IR  $7.14 \pm 4.77$ , and the mean of PSA value was  $3.76 \pm 1.99$  ng/dL. The PSA showed negative correlation with Insulin Resistance ( $r = -0.049$ ;  $p < 0.005$ ).

**Conclusion:** The level of PSA had negative correlation with insulin resistance among men with T2DM-MetS in this study.

#### PO361

##### TESTOSTERON LEVEL AND INSULIN RESISTANCE IN MEN WITH TYPE 2 DIABETES MELLITUS-METABOLIC SYNDROME

A. Tjokropawiro<sup>1</sup>, H. Susanto<sup>1</sup>, S. Wibisono<sup>1</sup>, S. Murtiwi<sup>1</sup>, S. Adi<sup>1</sup>, A. Sutjahjo<sup>1</sup>, A. Pranoto<sup>1</sup>. <sup>1</sup>Surabaya Diabetes and Nutrition Center dr. Soetomo Teaching Hospital Airlangga University Faculty of Medicine, Surabaya, Indonesia

**Background:** Testosterone deficiency often occurs in people with type 2 diabetes mellitus (T2DM) where it contributes to mood and libido disturbances. Total testosterone levels inversely associated with insulin resistance, a factor which has the potential to provide micro and macro vascular complications in patients with T2DM.

Several studies in men showed that testosterone supplementation can improve insulin sensitivity conditions. Recent studies have reported that 20-64% of men with testosterone deficiency/hypogonadism also have T2DM. The proportion of men who have both T2DM and hypogonadism increases in older groups of men.

Men who have slightly reduced total testosterone level, but not low enough to be considered as testosterone deficiency are also more likely to have low insulin and high blood glucose levels. This study will examine the correlation between total testosterone level and insulin resistance in men with T2DM-MetS.

**Method:** This cross sectional study was performed in Surabaya private clinic. Study period was six months between January to June 2014. The variables include: fasting blood sugar, 1 hour post prandial, A1C, HOMA-IR and levels of the total testosterone was measured by radioimmunoassay technique. Low testosterone for patient with T2DM was defined as below 400 ng/dL and normal if above 400 ng/dL. HOMA-IR value more than 2.0 is considered to be positive for IR.

Patients on testosterone replacement, and corticosteroids were excluded from this study. Statistical analysis was performed using SPSS 17.0 and Spearman's test.

**Result:** Fifty two male subjects were enrolled in this study. The mean age was  $62.32 \pm 8.72$  years old, fasting blood sugar  $139.68 \pm 43.65$  mg/dL, blood glucose 1 hour post prandial  $255.56 \pm 112.06$  mg/dL, mean A1C  $7.89 \pm 1.80\%$ , the